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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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In re Application of)

Ryan Xue and Kenji Kosaka)

Art Unit: 3636

Application No. 09/986,213)

Examiner: Sarah C. Burnham

Filed: October 22, 2001)

For: *Apparatus and Method for Cyclic Adjustment*)

Of a Supporting Element in a Seat)

Attorney Docket No. 41575/0126-114)

May 12, 2004

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Attention: Board of Patent Appeals and Interferences

APPEAL BRIEF

Real Party in Interest

The real party in interest in this appeal is the Assignee, L & P Property Management, Company.

Related Appeals and Interferences

There are no related Appeals and Interferences.

Status of the Claims

The currently pending claims include claims 1-7, 14-16, 18, 38 and 41-43. These claims are appealed. No claims have been allowed.

Status of Amendments

A Response and Amendment was filed on August 6, 2003 including amendments after final rejection.

Summary of the Invention

The present invention is a lumbar support for seats, especially automobile seats, that cycles. The cycling of the present invention moves a lumbar support automatically back and forth for ergonomic purposes. The movement and cycling of the present invention serves the dual purpose of imparting a perceptible massage sensation to a seat occupant while simultaneously relieving muscle fatigue through muscle movement.

The apparatus of the present invention includes a supporting element, for example, a flexing metal or plastic web. The supporting element is flexed by a drive assembly. A controller is associated with the power drive assembly in order to control it in a preconfigured manner. The controller is configured to repeat a cycle of preconfigured movements automatically for a preconfigured duration of time.

The present invention concerns the nature of the preconfigured cycling movement and its effect on the seat occupant. It is known that periodic movement of an ergonomic support such as a lumbar support relieves muscle stiffness and fatigue that arises when an occupant remains in the seat for a period of time, as for example on a long automobile trip. It is also known that ergonomic supports that impart a sensation of a massage are a desirable feature in seating. The present invention is a novel and non-obvious pattern of cyclic movement that achieves both of these desirable functions simultaneously.

The cyclic movement achieved by the present invention comprises a series of movements each of which is perceptible to the seat occupant, and each of which is defined

quantitatively by a critical distance through which the supporting element is moved. Moreover, the movements, in order to achieve the dual purpose stated, are further quantitatively defined by a particular duration in time. Finally, the particular pattern of movement that achieves both the stated purposes of the invention is defined by a preconfigured series of positions, including at least at first, second and third position.

In particular, as is structurally recited in claim 1, the cycling lumbar support of the present invention begins at a first selected position, makes a first perceptible movement to a second position, then makes a second perceptible movement in a second direction to a third position. The movements between the second and third position repeat. The movements between the second and third position are at least 12 millimeters in distance and between 5 and 25 seconds in duration.

These preconfigured movements, when cycled, pump lactic acid out of otherwise stationary muscles, alleviating muscle fatigue. Simultaneously, these preconfigured movements achieve a desirable massage effect on the seat occupant.

Issues Appealed

- I. The Final Office Action fails to establish a prima facie case of obviousness under 35 USC §103.
- II. The single prior art reference relied upon in the Final Office Action teaches away from the claimed present invention.
- III. The Prior Art does not Suggest or Motivate the Position Limitations of the Pending Claims.
- IV. Claims 1-7 and 14-16 are Properly Supported under 35 USC 112, first paragraph.

Argument

I. The Final Office Action fails to establish a prima facie case of obviousness under 35 USC §103.

The Final Office Action fails to establish a prima facie case of obviousness under 35 USC §103. The pending claims are rejected under 35 USC §103 as being “anticipated” [sic] by Benson (5,816,653). The initial burden of establishing a prima facie case of obviousness is on the patent office, *In re Reinhart*, 531 F. 2d 1048, 189 USPQ 143 (CCPA 1976), MPEP 2142. The Final Office Action fails to bear this burden.

The immediately striking aspect of the Final Office Action and the present Appeal is that the reference upon which final rejection is based is the Applicant’s own patent. Both the Benson ‘653 patent and the present invention on appeal are the products of the Applicant’s ongoing ergonomic research in the field of lumbar supports for automobile seats. Applicant was well aware of the structure, parameters and teachings of the Benson ‘653 patent when the present invention was developed and the present application and claims were drafted. Accordingly, the present application expressly calls out and explains the distinctions of the present invention from the Benson ‘653 patent and structurally recites those patentable distinctions in the claims.

In order to establish a prima facie case of obviousness three basic criteria must be met. First there must be some suggestion or motivation to modify the reference as recited in the application. Second there must be a reasonable expectation of the success of that modification for the problem it is intended to address. Finally the prior reference must teach or suggest all the claim limitations. *In re Vaeck*, 947 F. 2d 488, 20 USPQ 2d 1438 (Fed. Cir. 1991), MPEP §2142. The Final Office Action fails to meet any of these criteria.

The Final Office Action merely recites the structural elements revealed in the Benson '653 patent, including drive means, a support element and an apex of the support element. The Office Action then concludes that the distance of the preconfigured movements of the lumbar support by its controller and the duration of those movements are a mere matter of design choice.

“It would have been an obvious matter of design choice to modify the apparatus disclosed by Benson to have a distance of movement between second and third position [sic] equal to at least about 11 millimeters and duration of movement between two and thirty seconds. Both are matters of design choice and the criticality of the chosen ranges is not presented in the specification.” See Final Office Action, pages 5-6.

This conclusory statement is based upon two factual errors. First, the recited ranges of motion and duration relied upon in the Final Office Action are selected from a portion of the specification containing a typographical error. Second, the present specification expressly calls out the criticality of the chosen ranges and the fact that they are patentably distinguishable for the fact they impart the desirable massage effect that the prior art Benson '653 patent expressly avoids.

The Office Action is based upon the statement that “Benson discloses that each movement lasts 5 - 25 seconds and each pause lasts 1 - 1.5 second. See, Final Office Action page 5. This portion of the Benson '653 specification, column 5 lines 40-45, is a typographical error (this specification was not filed by undersigned counsel). It is clear from figure 5, the claims, the overall context of the Benson '653 patent and common sense that these ranges are reversed. This discrepancy was called out to the Examiner, twice, in Applicant's responses to both Office Actions. The typographical error was also corrected by a Certificate of Correction issued on June 24, 2003. In point of fact, the time duration of each movement is 1 to 1.5 seconds and a pause between movements lasts 5-25 seconds. While it is unfortunate that this typographical error misled the Examiner, the error cannot stand as a grounds for denying

Applicant their substantive rights in the current application to claims structurally reciting a patentable distinction over the prior art.

Secondly, the Office Action's conclusory statement that the range of time duration and range of distance traveled (greater than 12 millimeters) by each movement of the lumbar support is a mere matter of design choice ignores the problem articulated by the present application in the background section and, consequently, ignores the novel and non-obvious solution to that problem. On page 2 of the present application it is expressly stated at lines 15-18 that massaging elements are "popular with the seat occupants for improving posture and comfort." The background goes on to explain that it is a direct result of Applicant's research on the subject that the beneficial effect of cycling motion (pumping lactic acid out of the muscles) can be achieved together with the "desired comfortable massaging motion." See page 2, line 27. That same paragraph states the critical range at which the perception of a massage effect is felt; at 12 millimeters or more for each movement of the lumbar support. Moreover, the critical range, 12 millimeters and above, is again expressly recited on page 8, lines 11-14 of the application. There it is stated that the "total range of travel is 12 millimeters. Ergonomic studies have revealed that this configuration is preferred by surveyed seat occupants."

By contrast, the movement range recited in the Benson '653 patent is 6 to 10 millimeters. See column 5, line 65 and column 8, lines 40-46. Also the range of time duration properly recited in the Benson '653 patent is that the electrical pulse that drives movement, and consequently the movement itself, "occurs during an interval of not less than about 1 second and not more than about 1 and 1-½ seconds." See column 8, lines 26-29.

The limitations of the now pending claims expressly recite that the range of movement be 12 millimeters or greater. These ranges do not overlap; they do not even abut one another. The

currently pending claims also recite a time duration between 5 and 25 seconds. This range does not overlap a range of between 1 and 1.5 seconds; it doesn't even abut that range. (After final amendments reciting 12 millimeters were not entered, but are re-submitted herewith. Previous claims recited 11 millimeters.)

As noted in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), if the claimed relative dimensions perform differently than the prior art device, then the claimed device is patentably distinct from the prior art device. Here, the resultant difference is the perceptibility of movement. The invention of claim 6 provides a seat occupant with a desired perceptible movement, which is not taught or suggested by the Benson reference.

The Benson '653 prior art reference does not therefore teach or suggest all the claim limitations. Accordingly, the Final Office Action does not establish a prima facie case of obviousness, and the claims should be remanded below for allowance.

II. The single prior art reference relied upon in the Final Office Action teaches away from the claimed present invention.

The single prior art reference relied upon in the Final Office Action, the Benson '653 patent, teaches away from the pending claims.

It is improper to reject pending claims for obviousness based upon a prior art reference that teaches away from the claim limitations, MPEP §2145, *In re Gurley*, 27 F.3d 551, 554, 31 USPQ 2d 1130, 1132 (Fed. Cir. 1994), *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). The Benson '653 reference teaches away from the type of perceptible massaging motion structurally recited in the pending claims.

The pending claims distinguish themselves from the Benson '653 reference both qualitatively and quantitatively. Claim 1 qualitatively recites that the movements of the lumbar

support be “perceptible.” The claims also quantitatively recite ranges that do not overlap or even abut the ranges disclosed in the Benson ‘653 patent.

The Benson ‘653 patent repeatedly emphasizes that its small, incremental movements are “virtually imperceptible by the seat occupant as they create a pumping action that increases blood circulation through the muscle fibers and prevents lactic acid build up within the muscles.” See column 7, lines 30-33. At the most, Benson concedes that in some thin seats for some sensitive individuals, the 6 to 10 millimeter movement disclosed therein may be “barely perceivable to the seat occupant, i.e. on the edge of perception...” See column 5, lines 58-59. Teaching movements that are not perceptible and disclosing a range “on the edge of perception” and *below* teaches away from the clear and express intent of the present application: to impart a massage effect, which, necessarily, must be perceived by the seat occupant.

Even more compelling is the Benson ‘653 recitation in the background section, which describes the purpose of the imperceptible motions as pumping lactic acid out of fatigued muscles. There, the Benson ‘653 patent expressly states that a massaging effect works against the stated purpose of that patent.

“More particularly with respect to motor vehicle seats, *massaging elements*, hand driven or motor driven arching elements adjustable in height and degree of curvature... have been suggested to reduce muscle fatigue during prolonged periods of sitting. However, *each of these purported solutions fail* to adequately alleviate muscle fatigue, give rise to *undesirable effects* on the seat occupant, or have other characteristics that have prevented their widespread acceptance.” See column 1, lines 44-54.

It is difficult to conceive of a more clear example of express teaching away from the “desirable massaging effect” that is the stated goal of the present application.

The prior art reference must be considered in its entirety, including disclosures that teach away from the claims, MPEP §2141.02, §2145. The express teaching of the Benson ‘653

reference that perceptible movements are to be avoided, and that the massage effect fails to alleviate muscle fatigue, cannot be ignored. Moreover, the proposed modification upon which the Office Action relies (that changing the range of motion and range of time duration is a mere “design choice”) would render the Benson ‘653 prior art reference unsatisfactory for its intended purpose, and change its principle of operation. The Benson ‘653 patent expresses a principle of increasing circulation of muscles with movement below the edge of perception. Deliberately inducing perceivable movements would render the Benson ‘653 patent unsatisfactory for that stated purpose. Accordingly, the pending claims cannot be rejected based upon that reference, §2143.01, *In re Ratti*, 270 F. 2d 810, 123 USPQ 349 (CCPA 1959).

Claims 2-7, 14-16 and 38 depend from claim 1 and are allowable for the reasons stated above.

Because the Benson ‘653 reference on which the Final Office Action’s obviousness rejection relies teaches away from the solution of the pending claims, there is no suggestion or motivation to modify that reference as is offered in the Office Action as justification for the rejection. Once again, the Office Action fails to establish a prima facie case of obviousness.

III. The Prior Art does not Suggest or Motivate the Position Limitations of the Pending Claims.

Independent claim 18 does not include the limitation of the second and third positions being 12 millimeters apart. Instead claim 18 includes the limitation of “said controller defining a second and third positions relative to said first position.” This limitation is not taught or suggested by the Benson reference.

The Office Action relies upon the proposition that the Benson reference discloses three positions. The Examiner defines a second position as a position in which the apex (27) is at its

most extended curvature. The Examiner defines a third position as a position in which the apex (27) is at its most flat curvature, and the Examiner defines a first position as some position between the second and third positions. However, the Benson reference does not disclose movement between the second and third positions as defined by the Examiner. The Benson reference only discloses apex travel between an initial position and a second position.

In contrast to the Benson reference and the definitions put forth by the Examiner, the Applicants have defined second and third positions relative to a first position. The seat occupant sets the first position, and the apex travels between the second and third positions after cycling begins. The Benson reference does not teach or suggest cycling between second and third positions relative to a first position.

Independent claims 41 and 43 are patentable over the Benson reference for reasons similar to those presented in regards to claim 18.

Claim 41 includes the limitation of “said output of said driving assembly engages said traction actuator to move said archable support element from a first position to a second position and from said second position through said first position to a third position.” For the reasons stated above, Benson does not disclose this claim limitation. Because the cited references do not teach or suggest every limitation of claim 41, claim 41 must be viewed as non-obvious. Claim 42 depends from claim 41 and is allowable by virtue of its dependency for the reasons stated above.

Claim 43 includes the limitation of “an adjustment cycle that begins at a first position, then makes a first movement in a first direction to a second position, then makes a second movement in a second direction through said first position to a third position, then moves in said first direction again.” As noted above, the Applicants have defined second and third positions

relative to a first position. The seat occupant sets the first position, and the apex travels between the second and third positions after cycling begins. The Benson reference does not teach or suggest cycling between second and third positions relative to a first position.

The Office Action having failed to establish a prima facie case of obviousness, the pending claims should be remanded for allowance.

IV. Claims 1-7 and 14-16 are Properly Supported under 35 USC 112, first paragraph.

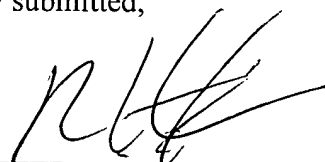
An Amendment After Final Rejection accompanies this Appeal Brief, and this Amendment is respectfully believed to overcome the rejection under 35 USC 112, first paragraph.

In the Amendment, applicant has amended claim 1 to recite, "said second and said third positions being at least about 12 millimeters apart" as opposed to the previously recited 11 millimeters. Movements of 12 millimeters are supported in the present application at page 2, lines 24-25; page 8, lines 11 -14; page 11, lines 5-8 and page 14 line 24 through page 15, line 13. Additionally, claim 1 has been amended to recite, "wherein each of said movements is a duration between 5 and 25 seconds." That the movement be long, i.e. preferable 5 to 25 seconds, is supported at page 10, lines 10-11, and in original claims 11, 24 and 35 on pages 20, 23 and 24 of the present application.

Conclusion

The rejections under 35 U.S.C. §§ 103(a) have all been met overcome or obviated. Accordingly, it is submitted that the rejections are improper and the applicant prays for a finding in his favor.

Respectfully submitted,



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